

## SNOWFALL.

Some marked variations were presented in the snowfall distribution usually associated with a mid-spring month.

During the Easter season, particularly on Easter Sunday, heavy snow, high winds, and severe cold, usually associated with the Christmas period, prevailed over a wide area from the Middle Rocky Mountains to the Great Lakes. The total snowfall during this period was in many cases the greatest ever known in April, and in some instances the fall was as great as that for the entire preceding winter.

Near the end of the second decade heavy snow fell over the middle Rocky Mountains and the adjacent plains, the depths frequently ranging from 10 to 20 inches over the lower elevations to nearly 100 inches in the high mountains of northern Colorado and southern Wyoming. Several lives were lost, due to the severity of the storms

and much loss was sustained by the stock interests, mainly among lambs and calves, but also to older cattle weakened from exposure during the long cold winter and general lack of sufficient feed.

## RELATIVE HUMIDITY.

Throughout the country as a whole the relative humidity was higher than normal, although in some sections surprising deficiencies were experienced. This was notably the case in portions of the Ohio Valley and southward over much of the Gulf States, where, despite the heavy and frequent precipitation and the saturated condition of the soil, the relative humidity averaged less than normal, and at some points distinctly so. Over Texas the dry conditions existing during the month were indicated by large deficiencies in the relative humidity, and there were slight deficiencies over the Pacific States and locally along the Atlantic seaboard.

## STORMS AND WARNINGS—WEATHER AND CROPS.

## STORMS AND WEATHER WARNINGS.

By EDWARD H. BOWIE, Supervising Forecaster.

[Washington, May 21, 1920.]

## WASHINGTON FORECAST DISTRICT.

In this forecast district the month was noteworthy by reason of the frequency of alternations of fair and foul weather, low temperatures, and the excess in number and rapid movements of areas of high and low pressure. The month opened with a disturbance of large area and considerable intensity over the central Mississippi Valley, which storm moved rapidly northeastward and on the 3d disappeared in the region of Hudson Bay. It produced general rains east of Mississippi River during the 1st and 2d. On the 1st advisory warnings of strong winds were sent to open ports on Lake Michigan, and on the 2d cold-wave warnings were ordered for the Ohio Valley and the region of the Great Lakes and storm warnings were displayed on the Atlantic coast at and between Cape Hatteras, N. C., and Eastport, Me. On the 3d the forecast stated that a storm that was then central over the Texas Panhandle would advance east-northeastward and be attended by general cloudiness and rains over nearly all parts of the Washington forecast district within the next 36 hours with a probability of snow in the upper Lake region. This disturbance moved as forecast and on the 4th, Easter Sunday, rains were general east of the Mississippi River and snow was falling on the Great Lakes. Moreover, on the 3d advisory warnings of snow and strong winds and gales were sent to open ports on Lake Michigan and small-craft warnings were displayed on the Mississippi, Alabama, and northwest Florida coasts. On the 4th northwest storm warnings were displayed on the east Gulf and on the Atlantic coast at and north of Jacksonville, Fla., and cold-wave warnings were distributed over the lower Ohio Valley, Tennessee, and the east Gulf States and over the Carolinas, Virginia, the District of Columbia, and Maryland.

On the morning of the 11th, when a disturbance was central over Kansas, it was forecast that this storm would move east-northeastward and be attended by rains and snows in the region of the Great Lakes and showers and thunderstorms in the Ohio Valley, Tennessee, and the

east Gulf States the following night and Monday, the 12th, and by showers Monday, the 12th, in the Atlantic States. This forecast accurately described the conditions that actually occurred. Furthermore, on the 11th advices of gales and snows were sent to open ports on Lake Michigan and the afternoon of the 12th, storm warnings were displayed on the Atlantic coast at and between Jacksonville, Fla., and Eastport, Me.

A disturbance of moderate intensity was central the morning of the 15th over Kansas and its presence made necessary the issue of a forecast of general rains east of the Mississippi River during the succeeding 36 hours. On the morning of the 16th, the center of this disturbance was over Illinois and on the 17th over Virginia. In the meantime a disturbance of marked intensity moved rapidly southeastward from British Columbia, and on the morning of the 17th its center was over Colorado with every indication that it would move eastward and be attended by general rains over the eastern half of the country. The development over southern Canada of an area of high barometric pressure, however, prevented such a movement, and it was not until the 22d that this disturbance finally reached the Atlantic Ocean. It produced general rains, however, over much of the country east of the Rocky Mountains, and on the 20th severe local thunderstorms and tornadoes occurred in the East Gulf States and Georgia. This disturbance was followed by another that made its appearance in the Northwestern States on the 19th. It moved southeastward during the 20th, and the morning of the 21st its center was over northwestern Kansas, whence it moved east-northeastward and reached the Grand Banks on the 25th, attended by general rains over the Northern and Eastern States.

The last important storm of the month had its center on the morning of the 26th over Mississippi, whence it moved northeastward and disappeared north of the St. Lawrence River on the 29th. Storm warnings were displayed in connection with this disturbance on the Atlantic coast at and north of Block Island, R. I., and on Lakes Erie, Ontario, Huron, eastern and central Lake Superior, and extreme northern Lake Michigan.